

## CLAIMS

1. An ultrasonic probe, comprising an ultrasonic element for transmitting and receiving ultrasonic waves; and a sound window enclosing the ultrasonic element; and a sound propagation liquid charged in the sound window,

wherein a barrier layer capable of inhibiting the permeation of liquids and gases is provided on a wall surface of the sound window.

2. The ultrasonic probe according to claim 1, wherein the barrier layer is provided on an internal wall surface of the sound window.

3. The ultrasonic probe according to claim 1, wherein the barrier layer comprises at least one selected from a polyparaxylylene layer and a metal layer.

4. The ultrasonic probe according to claim 3, wherein the barrier layer comprises a polyparaxylylene layer and the layer thickness of the polyparaxylylene layer is in the range from 0.1  $\mu\text{m}$  to 500  $\mu\text{m}$ .

5. The ultrasonic probe according to claim 3, wherein the barrier layer comprises a polyparaxylylene layer and the polyparaxylylene layer is formed by vapor deposition of diparaxylylene or the derivative thereof.

6. The ultrasonic probe according to claim 3, wherein the barrier layer comprises a metal layer and the metal layer comprises at least one selected from the group consisting of aluminum, gold, nickel and platinum.

7. The ultrasonic probe according to claim 3, wherein the barrier layer comprises a metal layer and the thickness of the metal layer is in the range from 0.1  $\mu\text{m}$  to 30  $\mu\text{m}$ .

8. The ultrasonic probe according to claim 1, wherein the barrier layer comprises a plurality of layers.